

**REMARKS/ARGUMENTS**

Claims 1-6, 8-17, and 19-35 remain pending. Claims 1-3, 8, 9, 12, 14, 17, 19-21, and 31 have been amended. Claims 17 and 18 have been canceled.

Applicants gratefully acknowledge the indication in the Office Action of July 5, 2005, that claims 10-14, 16, 21, and 29 define patentable subject matter, although those claims were objected to as depending from a non-allowed base claim. Reexamination and reconsideration of the amended claims are respectfully requested.

Rejections under 37 C.F.R. § 102(b)

Claims 1, 4, 5, 15, 17, 22-27, and 30 were rejected under 37 C.F.R. § 102(b) as allegedly being anticipated by U.S. Patent No., 3,948,269 to Zimmer (hereinafter "Zimmer"). Such a rejection is traversed in part and overcome in part as follows.

Claim 1 recites a method of controlling a temperature of an applicator body. Claim 1 has been amended to recite that an applicator body is provided which includes at least one electrode surface. A coolant is delivered through a conduit at a substantially constant rate, and heat energy is delivered from *within* the applicator body. This combination of a constant coolant delivery rate and heat energy delivery from within the applicator body allows the electrode surface to be cooled to a desired temperature, typically within a range of between about -5°C and about 3°C. Therapeutic electrical energy can then be delivered through the at least one cooled electrode surface. Applicant respectfully submits that this advantageous method for delivery of therapeutic electrical energy through an electrode controllably cooled to a desired temperature has not reasonably been shown to be taught or suggested in the cited art.

First addressing the Zimmer patent, Applicant notes that the reference is cited as disclosing a cryomedical device, but is not alleged to teach or suggest the use of a cooled electrode surface, much less the specific cooling methodology of amended claim 1.

Regarding U.S. Patent No. 6,216,704 to Ingle et al. (hereinafter "Ingle"), Applicant acknowledges that the reference represents a significant advancement in the art. Applicant notes, however, that the analysis in the Office Action considers one therapeutic treatment electrode of the Ingle et al. system as a "heating element" and the other electrode of

Ingle et al. as "at least one electrode." [See Office Action of July 5, 2005, pg. 4] Applicant further notes that amended claim 1 indicates that heat energy is delivered from *within* the applicator body to at least one electrode surface. As therapeutic electrodes generally apply electrical energy to tissues (which may then be resistively heated, thereby heating the electrode surface *outside* the probe surface), if the present rejections are maintained, Applicant respectfully requests that the Examiner identify where in the Ingle et al. patent or other cited art the presently claimed invention is taught or reasonably suggested.

Regarding U.S. Patent No. 6,413,255 in the name of Stern (hereinafter "Stern"), Applicant notes that that reference is cited as solely as allegedly disclosing a method and apparatus for treatment of tissue in which R134a refrigerant is used to cool an electrode. [See *Id.*, pg. 5]

As no reference now of record have been shown or alleged to reasonably teach or suggest the combination of delivering coolant at a substantially constant rate and delivering heat energy, from within an applicator body, to an electrode surface by energizing one or more heating elements so that the electrode surface is cooled by the coolant to a desired temperature, Applicants respectfully submit that claim 1 is now in condition for allowance.

Regarding independent claim 17, Applicants note that that claim has been amended to recite an applicator having an electrode surface for delivering therapeutic electrical energy, a conduit that delivers a coolant, and one or more heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body to deliver a heating energy to the coolant in the conduit. The heating energy is sufficient to heat the coolant so that the electrode surface is at a desired temperature. Hence, amended claim 17 is allowable for many of the reasons given above.

The dependent claims are allowable as depending from allowable base claims as well as for the novel combinations of elements recited therein.

Rejections under 37 C.F.R. § 102(e)

Claims 1-4, 7, 9, 17-20, 22, 26, 27, 30-33, and 35 were rejected under 37 C.F.R. § 102(e) as allegedly being anticipated by Ingle et al. Such rejections are traversed in part and overcome in part as follows.

Regarding independent claims 1 and 17 (as well as the dependent claims that depend therefrom), these claims are allowable for the reasons given above.

Regarding independent claim 31, that claim recites a body having one or more electrodes for contacting intermediate tissue and a control system coupled to a power source and to the electrode(s). The cooling assembly is configured to control a temperature of the electrode(s). The cooling assembly includes a heating element to deliver energy to the flow conduit from within the body. This may allow, for example, the temperature of the electrode to be controlled by transmitting fluid and electrical heating energy prior to contacting a tissue surface. The system of claim 31 may also allow the electrode surface to be controlled when no therapeutic electrical energy is being applied. Hence, the system of claim 31 is allowable over the cited art.

Regarding independent claim 35, that claim has been amended to recite a system for controlling a temperature of an intermediate tissue in which the system comprises a memory with a code module for delivering energy to a heating element that controls the temperature of the coolant, as well as a code module for controlling transmission of therapeutic electrical energy through the intermediate tissue to a target tissue. These two separate code modules have not reasonably been shown to be taught or suggested by the cited art. Applicants note that the separation of the control of the coolant temperature from the therapeutic energy delivery recited in the system of claim 5 may be implemented using an integrated code system, but provides tremendous advantages in independently controlling electrode surface temperatures and therapeutic energy delivery. Absent any reasonable teaching or suggestion that these code modules be provided, Applicant respectfully submits that claim 35 is now in condition for allowance.

Rejections under 35 U.S.C. § 103

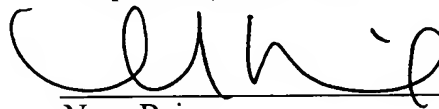
Claim 6, 28, and 34 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ingle et al. in view of Stern. Independent claims 1, 17, and 30 have been amended to recite structures and methods which can apply heat to an electrode surface from within a probe body and the like, as described above. As the Examiner's analysis of the Ingle et al. reference appears to rely on heating of the electrode effected through increasing tissue temperatures outside the probe (rather than through resistive heaters disposed within a probe body or in thermal contact with a cooling fluid conduit), and a Stern appears to be cited solely regarding the specific refrigerant gas, Applicant respectfully submit that claims 6, 28, and 34 are allowable.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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